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CAETETERMES TAQUARUSSU, A NEW GENUS AND SPECIES OF ECUADORIAN NASUTE (ISOPTERA, TERMITIDAE, NASUTITERMITINAE)

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ABSTRACT

Soldiers and workers of Caetetermes taquarussu, *gen. n., sp. n., from the Ecuadorian evergreen rain forest are described, with a study of the soldier mandibles and worker digestive tract.*

INTRODUCTION

The number of species listed for the continental area of Ecuador (Araujo, 1977: 198) is now raised to 13, most belonging to the Nasutitermitinae.

In this paper, the nomenclature for the mandibles is presented according to Krishna (1968: 265), except for the fourth marginal tooth of the left mandible, established by Sands & Lamb (1975: 190) (figs. 9, 11): A, apical tooth; M1, M2, M1+2, M3, M4, respectively first, second, first plus second, third, and fourth marginal teeth. The index of the left mandible (Emerson, 1960: 5-6) is defined as the linear distance between the tips of A and M1+2 divided by the linear distance between the tips of M1+2 and M3. The parts of the worker digestive tube are recognized as in Noirot & Noirot-Timothée (1969: 53), with the symbols used by Johnson (1979: 32) and some others, as follows (figs. 13-16): O, oesophagus; CP, crop; G, gizzard; SV, stomodeal valvae; M, mesenteron (mid-gut); MS, mixed segment; T, Malpighian tubules; P1, first proctodeal segment; P2, second proctodeal segment (enteric valvae); P3, third proctodeal segment (paunch); C, colon; R, rectum.

Symbols for the institutions in which the material studied is deposited: Museu de Zoologia, Universidade de São Paulo (MZSP); British Museum (Natural History) (BMNH). The holotype is in the BMNH.

Caetetermes, gen. n.

From Tupi: caa, forest; ete, true.
Type-species: *Caetetermes taquarussu*, sp. n.
Imago. Unknown.

Soldier. Monomorphic. Head capsule with a few long bristles. Nose with short bristles at apex. Head capsule sharply constricted (figs. 1-4) behind antennae, posterior region bulbous. Nose long, cylindrical and not specially enlarged at base. Postclypeus oblique, clearly visible in dorsal view (figs. 1-2). Mandibles (figs. 5-6) without points, with a distinct but not sharply defined thinner patch of cuticle at the apex. Antennae distinctly longer than head. Legs long; anterior coxae (fig. 7) with a prominent hump outside.

Major worker. Width of postclypeus/length of postclypeus 3.66-4.89. Left mandible (figs. 9, 12): index 0.49; A shorter than M1+2; posterior margin of A almost straight and shorter than the anterior margin of M1+2; angle, between A and M1+2 acute; cutting edge of M1+2 sinuate, separated from M3 by a sharp notch; M3 developed, posterior margin convex; M4 partially visible between M3 and molar prominence; laminar structure at the posterior margin of M3 abraded by use in most of the examined specimens; molar prominence with many ridges inside, projecting well beyond the tip of M3 and separated from it by a distance about equal to the width of M3. Right

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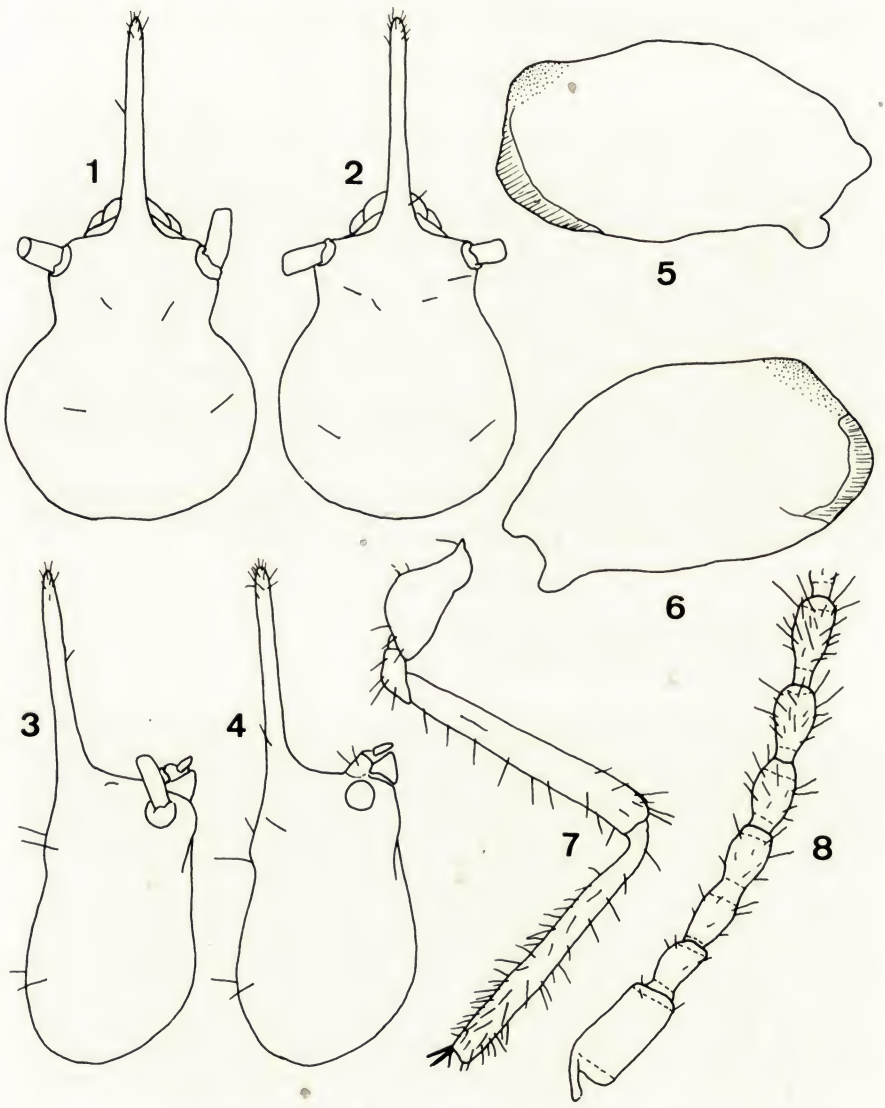
mandible (figs. 10-11): A and M1 as left A and M1+2; posterior margin of M1 a little longer than the anterior margin; M2 developed, its rounded apex a little closer to the molar plate than to the tip of M1; angle between M1 and M2 almost square; molar plate concave, with a distinct basal indented outline, apical ridge tooth-like, and remaining 7-9 ridges clearly visible (but more reduced than in typical *Nasutitermes* species) and diminishing towards base. Legs long but shorter than the corresponding soldier legs; anterior coxae with a weak hump outside corresponding to the prominent soldier hump;



C. taquarussu, soldier. 1-2, head, dorsal; 3-4, head, lateral; 5, left mandible, ventral; 6, right mandible, ventral; 7, anterior leg; 8, antenna. The same specimen: 1, 3; 2 and 4.

tibial spurs 2:2:2. Digestive tube (figs. 13-19): CP voluminous, asymmetrical, in other specimens not constricted as in fig. 13; G armature in the posterior half of the crop-gizzard conjunct; SV long; MS on the right half of the abdomen, ventro-laterally placed (figs. 17-18); MS longer than width of M, less than half the length of M, and shorter than P1; about half MS circumference represented by mesenteric tissue; T (fig. 14) enlarged near base, insertion and disposition as in the figure; P1 cylindrical, shorter than M, and joining the dilated P3 on the left half of the abdomen, P2 dorso-laterally placed (figs. 16, 19), armature very weak (not examined in detail); C relatively long, coiling downwards at the anterior extreme of P3; R voluminous.

Minor worker. Mandibles similar to major worker.

Comparisons

The imago-worker mandibles place *Caetetermes* near the Neotropical genus *Triangularitermes* (Mathews, 1977: 202) and the Ethiopian genus *Leptomyxotermes* (Sands, 1965: 51-52).

The left mandible of *Triangularitermes* workers differs by the narrower gap between M3 and the molar prominence, and by M4 completely hidden beneath the molar prominence; the right mandible has a less prominent M2, with a shallower concave posterior margin, and an acute angle between M1 and M2. The soldier of *Triangularitermes* is quite different, the head only scarcely or not constricted behind the antenne, short and conical nasus, mandibles with points small but distinct, and fairly short legs with no hump on the fore coxae; these characters seem to represent a more primitive condition than that seen in *Caetetermes*.

Concerning the thin patch of cuticle at the apex of the soldier mandible, besides *Caetetermes* only *Convexitermes* is kwown to present this character, among the 25 genera of Nasutitermitinae present in the Neotropical region (Sands, 1957: 20).

Leptomyxotermes imago mandibles are only hardly distinguished from those of *Caetetermes* worker mandibles. The major difference seems to be the more developed apical tooth which, in both mandibles, is about as long as the first marginals. The soldier of *Leptomyxotermes* is also similar to the soldier of *Caetetermes* and differs by the more bulbous (in side view) posterior region of the head, less oblique postclypeus, and presence of small points in the mandibles.

Caetetermes taquarussu, sp. n.
(Figs. 1-19)

From Tupi: taquarussu, large bamboo.

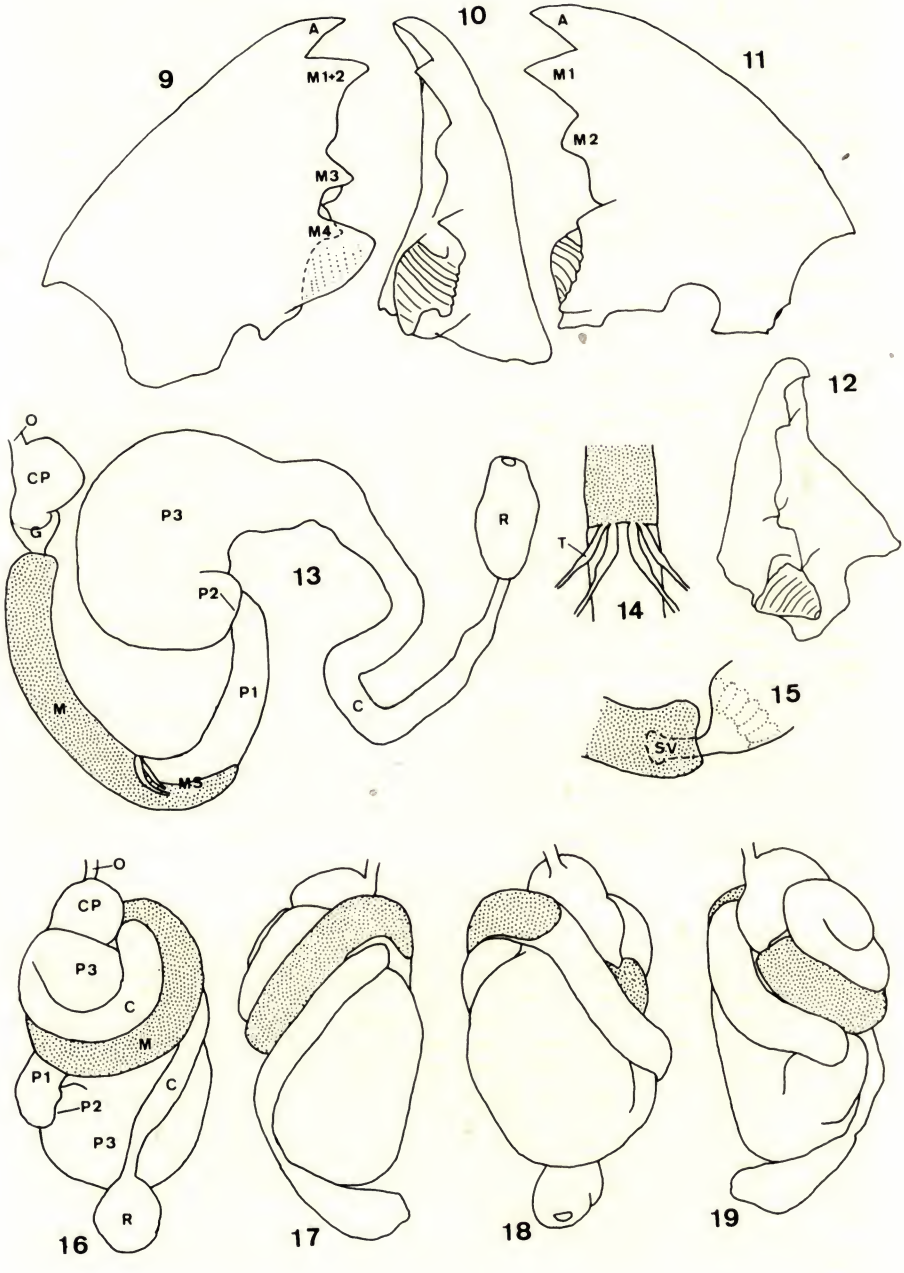
Soldier. Head capsule, postclypeus, postmentum and antennae brownish-yellow; nose darker, reddish-yellow to pale yellowish-brown. Labrum and mandibles yellow. Pronotum yellow; anterior margin darker, brownish. Thoracic (except pronotum) and abdominal sclerites yellow-white to yellow, transparent. Legs yellow-white. Pilosity of the head as in the figures. Tergites and sternites with an apical row of bristles, longer than those of head, and many shorter bristles, as long as or shorter than those of head. Head (figs. 1-2) globose behind constriction; in profile (figs. 3-4) nose upturned, dorsal margin with a distinct hump just in front of the constriction. Antennae (fig. 8) with 14 articles: II-VI about the same legth and shorter than VII. Anterior tibiae about as long as head without nose.

Major worker. Head pale yellow. Legs white to yellow-white. Head with a few long bristles, separated by a distance larger than their length. Abdomen obcval.

Minor worker. In every respect similar to the major worker, but paler.

Variation. The size and dorsal view of the soldier head are the main feature of variation in this species.

Measurements (in millimeters) and proportions, based on 12 soldiers from the 4 samples studied. Length of head to tip of nose 1.53-1.84; length of nose



C. taquarussu, major worker. 9, 12, left mandible; 10-11, right mandible; 13-15, digestive tube (13, total; 14, T; 15, SV); 16-19, digestive tube, *in situ* (16, dorsal; 17, right; 18, ventral; 19, left).

0.56-0.75; width of head 0.78-0.90; height of head excluding postmentum 0.53-0.65; width of pronotum 0.44-0.53; length of hind tibia 1.22-1.44; length of head to tip of nose/width of head 1.82-2.20; length of head without nose/width of head 1.10-1.32; length of nose/length of head without nose 0.51-0.79.

Type-material. ECUADOR. *Morona-Santiago Province*:Los Tayos Cave Area (03°06'S, 78°12'W), type-colony number MZSP 8076, nr. BMNH 1976 504 G. C. 48, holotype (soldier), paratypes (soldiers), workers, 10.VII.1976, N. M. Collins: nr. MZSP 8078, nr. BMNH 1976 504 G. C. 257, paratypes (soldiers), workers, 27. VII.1976. N. M. Collins; Santiago Barracks (03°03'S, 78°02'W), nr. MZSP 8077, nr. BMNH 1976 504 G. C. 347, paratypes (soldiers), workers, 3.VIII.1976, N. M. Collins. *Pastaza Province*: Rio Negro (01°24'S, 78°12'W), nr. MZSP 8079. nr. BMNH 1976 504 G. C. 362, paratypes (soldiers). workers, 6.VIII.1976, N. M. Collins.

Habits

Caetetermes was collected in primary and secondary rain forests of Ecuador. The Ethiopian genus *Leptomyxotermes*, to which *Caetetermes* has the major morphological similarities, "appears... to feed exclusively on damp, well rotted wood, and to nest in chambers in or under dead logs, or parts of the mounds of other |termite| species" (Sands, 1965: 53). *Triangularitermes* "feeds on brown rotten wood and on residues of other termite nests, these probably also being rich in lignin" (Mathews, 1977: 203), a feeding habit very close to that of *Leptomyxotermes*, as emphasizes Mathews (*l. c.*: 202). The close similarities between the worker mandibles and coilings of the worker digestive tube of *Caetetermes* and *Triangularitermes*, and between the worker mandibles of *Caetetermes* and *Leptomyxotermes*, would indicate that the new genus has a similar feeding habit. *Caetetermes* seems to nest in or under dead logs, according to the collector's label information.

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